

DEPARTMENT OF HEALTH

NOTICE OF FINAL RULEMAKING

The Director of the Department of Health, pursuant to the authority set forth in sections 5 and 21 of the Water Pollution Control Act of 1984, effective March 16, 1985 (D.C. Law 5-188; D.C. Official Code §§ 8-103.04 and 8-103.20), and Mayor's Order 98-50, April 15, 1998, hereby gives notice of the adoption of the following amendment to Chapter 11 of Title 21 of the District of Columbia Municipal Regulations (DCMR).

These rules were previously published as proposed rules on October 12, 2001, at 48 DCR 9483 and as emergency and proposed rules on February 22, 2002 at 49 DCR 1706. This final rulemaking makes typographical and clarification corrections, adds a new §1104.5 to prohibit streams from being placed in pipes, amends §1104.7 to include the new numeric criteria for Secchi Depth, Chlorophyll a, Arsenic, and Ammonia, and amends §1105.5 to specify the applicability of the numeric criteria for water clarity and Chlorophyll a. No additional comments were received, and no changes have been made since its publication on February 22, 2002.

Chapter 11 (Water Quality Standards) of Title 21 (Water and Sanitation) (February 1998) of the District of Columbia Municipal Regulations (DCMR) is amended to read as follows:

1100 PURPOSE AND SCOPE

1100.1 This chapter establishes the revised Water Quality Standards (WQS) for the waters of the District of Columbia, as authorized by section 5 of the Water Pollution Control Act of 1984, effective March 16, 1985 (D.C. Law 5-188; D.C. Official Code § 8-103.01 *et seq.*).

1101 SURFACE WATERS

1101.1 For the purposes of water quality standards, the surface waters of the District shall be classified on the basis of their (i) current uses, and (ii) future uses to which the waters will be restored. The categories of beneficial uses for the surface waters of the District shall be as follows:

<u>Categories of Uses That Determine Water Quality Standards</u>	<u>Classes of Water</u>
Primary contact recreation	A
Secondary contact recreation and aesthetic enjoyment	B
Protection & propagation of fish, shellfish and wildlife	C
Protection of human health related	D
to consumption of fish & shellfish	
Navigation	E

1101.2 The surface waters of the District are designated for beneficial use classes

according to the categories delineated in subsection 1101.1 as follows:

CLASSIFICATION OF THE DISTRICT'S WATERS

Surface waters of the District	USE CLASSES	
	Current Use	Designated Use
Potomac River	B, C, D, E	A, B, C, D, E
Potomac River tributaries (except as listed below)	B, C, D	A, B, C, D
Battery Kemble Creek	B, C, D	A, B, C, D
C & O Canal	B, C, D, E	A, B, C, D, E
Rock Creek and its tributaries	B, C, D, E	A, B, C, D, E
Tidal Basin	B, C, D, E	A, B, C, D, E
Washington Ship Channel	B, C, D, E	A, B, C, D, E
Oxon Run	B, C, D	A, B, C, D
Anacostia River	B, C, D, E	A, B, C, D, E
Anacostia River tributaries (except as listed below)	B, C, D	A, B, C, D
Hickey Run	B, C, D	B, C, D
Watts Branch	B, C, D	B, C, D
Wetland	C, D	C, D

- 1101.3 The Director may remove a designated use, establish a partial use, or establish sub-categories of a use for a particular surface water segment or body if a use attainability analysis can demonstrate that attaining the designated use is not feasible because:

- (a) Naturally occurring pollutant concentrations prevent the attainment of the use;
- (b) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating the District's water conservation requirements to enable uses to be met;
- (c) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;
- (d) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or, to operate the modification in a way that would result in the attainment of the use;
- (e) Physical conditions related to the natural features of the water body, such as the lack of proper substrate, cover, flow, depth, pools, riffles, and the like unrelated to water quality, preclude attainment of aquatic life protection uses; or
- (f) Controls more stringent than those required by sections 301(b) and 306 of the Federal Clean Water Act would result in substantial and widespread economic and social impact.

1101.4 A designated use specified in section 1101 may not be removed and a partial use, that involves the removal of the designated use, may not be established if:

- (a) The use is actually attained in the surface water segment or body on or after November 28, 1975, unless a use requiring more stringent criteria is added, or
- (b) The uses will be attained by implementing effluent limits required under sections 301(b) and 306 of the Federal Clean Water Act and by implementing cost-effective and reasonable best management practices for nonpoint source control.

1101.5 If a permittee requests the Director to conduct a use attainability analysis and provides a reasonable basis for the need, the Director shall:

- (a) Conduct a public meeting in the watershed of the affected segment or water body to inform the public of the nature of the use change requested

and the basis of the request and solicit the opinions and views of the public prior to determining whether to conduct a use attainability analysis;

- (b) Inform the permittee and the public of the decision;
- (c) Inform the permittee of the approximate costs of the analysis and the schedule and the permittee shall provide payment as specified by the Director for the analysis;
- (d) Not allow the permittee to perform the analysis;
- (e) Form an advisory group of citizens and affected parties who will meet periodically during the course of the study;
- (f) Hold a public hearing concerning the preliminary finding of the use attainability analysis prior to concluding the study;
- (g) Submit the analysis to the EPA for review and approval, if it is determined that a modification or change in the uses of the segment or water body is justified; and
- (h) Modify or remove the use in accordance with federal and District procedures for revising water quality standards upon receipt of approval by the EPA.

1102 ANTIDegradation Policy

1102.1 TIER I: Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

1102.2 TIER II: If the water quality of the surface waters of the District exceeds the water quality criteria necessary to sustain the existing uses, those waters shall be maintained at that quality. The water quality will not be allowed to degrade unless the District finds, after full satisfaction of the intergovernmental coordination and public participation, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing the degradation to lower water quality, the District shall ensure water quality adequate to protect existing uses fully. Further, the District shall ensure that the highest statutory and regulatory requirements for all new and existing point sources and all cost effective and reasonable best management practices for nonpoint source control.

1102.3 TIER III: Where High Quality Waters constitute an outstanding national resource, such as waters of the national and District parks and wildlife refuges and waters of exceptional recreational or ecological significance, those waters shall be

designated Outstanding National Resource Waters (ONRW) and the water quality in the ONRW shall be maintained, protected and designated as below:

- (a) New point and nonpoint source discharges, treated or otherwise, shall be prohibited in these segments;
- (b) Increases in loadings or new pollutants from existing point and nonpoint source discharges shall be prohibited in these segments;
- (c) Short-term degradation of the water quality shall be allowed after opportunity for public participation and addressing their comments, if any. However, all practical means of minimizing the degradation shall be implemented; and
- (d) Designation of ONRWs shall be adopted after full satisfaction of the intergovernmental coordination of the District's agencies and public participation.

1102.4 SPECIAL WATERS OF THE DISTRICT OF COLUMBIA (SWDC): Any segment or segments of the surface waters of the District that are of water quality better than needed for the current use or have scenic or aesthetic importance shall be designated as Special Waters of the District of Columbia (SWDC). The water quality in SWDC designated segments of the District's surface waters shall be maintained at or above the current level by implementing the following:

- (a) Existing nonpoint source discharges, storm water discharges and storm sewer discharges to SWDC segments shall be controlled through implementation of best management practices and regulatory programs;
- (b) Construction or development projects, such as roads, bridges, and bank stabilization of the streams in which a SWDC designated segment is located, which may lead to pollution of the water, shall be permitted on a case-by-case basis to ensure that there are no long-term adverse water quality effects and that no impairment of the designated uses of the segment occurs; or
- (c) Short term degradation of water quality in a SWDC segment due to construction projects may be permitted provided that prior notice is given to the public and other local and federal government agencies and provided that the builder of the construction project addresses the concerns of the public and local and federal government agencies.

1102.5 The following waters of the District shall be the designated as SWDC segments:

- (a) Rock Creek and its tributaries, and

- (b) Battery Kemble Creek and its tributaries.

1103 WETLANDS

- 1103.1 In a wetland, the numerical and the narrative criteria shall be applied to the column of water above the wetland in accordance with the designated use.
- 1103.2 Wetlands with rooted vascular aquatic vegetation, except those specifically constructed or created as waste water treatment devices and except as provided in D.C. Official Code § 8-103.03(d) and D.C. Official Code § 8-103.06(a)(3), shall be protected from significant adverse hydrologic modifications, excessive sedimentation, deposition of toxic substances in toxic amounts, nutrient imbalances, and other adverse anthropogenic impacts.

1104 STANDARDS

- 1104.1 The surface waters of the District shall be free from substances in amounts or combinations that do any one of the following:
 - (a) Settle to form objectionable deposits;
 - (b) Float as debris, scum, oil, or other matter to form nuisances;
 - (c) Produce objectionable odor, color, taste, or turbidity;
 - (d) Cause injury to, are toxic to, or produce adverse physiological or behavioral changes in humans, plants, or animals;
 - (e) Produce undesirable or nuisance aquatic life or result in the dominance of nuisance species; or
 - (f) Impair the biological community that naturally occurs in the waters or depends on the waters for its survival and propagation.
- 1104.2 For the waters of the District with multiple designated uses, the most stringent standards or criteria shall govern.
- 1104.3 Class A waters shall be free of discharges of untreated sewage, litter and unmarked, submerged or partially submerged, man-made structures that would constitute a hazard to the users.
- 1104.4 The aesthetic qualities of Class B waters shall be maintained. Construction, placement or mooring of facilities not primarily and directly water oriented is prohibited in, on or over Class B waters unless:

- (a) The facility is for the general public benefit and service, and
- (b) Land based alternatives are not available.

- 1104.5 Class C streams shall be maintained to support aquatic life and shall not be placed in pipes.
- 1104.6 Class E waters shall be free of unmarked submerged or partially submerged man-made objects that pose a hazard to users of these waters.
- 1104.7 Unless otherwise stated, the numeric criteria that shall be met to attain and maintain designated uses are as follows (Tables 1 through 3):

Table 1

Constituent	Criteria for Classes		
	A	B	C
Bacteriological (No./100 mL)			
Fecal coliform (Maximum 30 day geometric mean for 5 samples)	200	1000	
Physical			
Dissolved oxygen (mg/L)			
Minimum daily average (3 samples per 24 hours Once per 8 hour)			5.0
One hour minimum			
March through June			5.0
July through February			4.0
Temperature (°C)			
Maximum			32.2
Maximum change above ambient			2.8
PH			
Greater than	6.0	6.0	6.0
And less than	8.5	8.5	8.5
Turbidity increase above ambient (NTU)	20	20	20
Secchi Depth (m)(seasonal segment average) [Note 1] April through October			0.8
Total dissolved gases (maximum % saturation)			110

Hydrogen sulfide (maximum (Φ g/L)	2.0
Oil & grease (mg/L)	10.0
Biological	
Chlorophyll a	
Concentration (Φ g/L)(seasonal segment average) [Note 1]	
July through September	25

Notes:

[Note 1] Shall apply to the tidal Anacostia River only and will be calculated as the seasonal average.

Table 2

Constituent	Criteria for Classes	
	C	
	CCC	CMC
		D

MAXIMUM VALUES FOR CLASS C, CCC (FOUR DAY AVERAGE),
CLASS C, CMC (ONE HOUR AVERAGE) AND CLASS D (30 DAY
AVERAGE)

Trace metals and inorganics in mg/L, except where stated otherwise (see Notes below)

Ammonia, total	[Note 6]	[Note 7]	
Antimony, dissolved			4.3
Arsenic, dissolved	0.15	0.34	0.00014 ^c
Cadmium, dissolved	[I] ^{CF}	[I.A] ^{CF}	
Chlorine, total residual	0.011	0.019	
Chromium, hexavalent,	0.011 ^{CF}	0.016 ^{CF}	
Dissolved			
Chromium, trivalent,	[II] ^{CF}	[II.A] ^{CF}	
Dissolved			
Copper, dissolved	[III] ^{CF}	[III.A] ^{CF}	
Cyanide, free	0.0052	0.022	220.0
Iron, dissolved	1.0		
Lead, dissolved	[IV] ^{CF}	[IV.A] ^{CF}	
Mercury, total recoverable	0.000012	0.0024	0.00015
Nickel, dissolved	[V] ^{CF}	[V.A] ^{CF}	4.6
Selenium, total recoverable	0.005	0.02	
Silver, dissolved		[VI] ^{CF}	65.0
Thallium, dissolved			0.0063
Zinc, dissolved	[VII] ^{CF}	[VII.A] ^{CF}	

Notes:

[Note 1] Superscript c means the criterion is based on carcinogenicity (10^{-6} risk). Superscript CF means the criterion is to be adjusted by using the conversion factors as specified in subsection 1105.10 of this Chapter.

[Note 2] CCC and CMC are defined in section 1199.

[Note 3] Human Health Criteria for metals will be based on Total Recoverable metals.

[Note 4] The formulas for calculating the concentrations of substances indicated above are as follows:

[I] The numerical CCC criterion for cadmium in $\Phi\text{g/L}$ shall be given by:
$$e^{(0.7852[\ln(\text{hardness})]-3.490)}$$

[I.A] The numerical CMC criterion for cadmium in $\Phi\text{g/L}$ shall be given by:
$$e^{(1.128[\ln(\text{hardness})]-3.828)}$$

[II] The numerical CCC criterion for trivalent chromium in $\Phi\text{g/L}$ shall be given by:
$$e^{(0.8190[\ln(\text{hardness})]+1.561)}$$

[II.A] The numerical CMC criterion for trivalent chromium in $\Phi\text{g/L}$ shall be given by:
$$e^{(0.8190[\ln(\text{hardness})]+3.688)}$$

[III] The numerical CCC criterion for copper in $\Phi\text{g/L}$ shall be given by:
$$e^{(0.8545[\ln(\text{hardness})]-1.465)}$$

[III.A] The numerical CMC criterion for copper in $\Phi\text{g/L}$ shall be given by:
$$e^{(0.9422[\ln(\text{hardness})]-1.464)}$$

[IV] The numerical CCC criterion for lead in $\Phi\text{g/L}$ shall be given by:
$$e^{(1.2730[\ln(\text{hardness})]-4.705)}$$

[IV.A] The numerical CMC criterion for lead in $\Phi\text{g/L}$ shall be given by:
$$e^{(1.2730[\ln(\text{hardness})]-1.460)}$$

[V] The numerical CCC criterion for nickel in $\Phi\text{g/L}$ shall be given by:
$$e^{(0.8460[\ln(\text{hardness})]+1.1645)}$$

[V.A] The numerical CMC criterion for nickel in $\Phi\text{g/L}$ shall be given by:
$$e^{(0.8460[\ln(\text{hardness})]+3.3612)}$$

[VI] The numerical CMC criterion for silver in $\Phi\text{g/L}$ shall be given by:
$$e^{(1.72[\ln(\text{hardness})]-6.52)}$$

[VII] The numerical CCC criterion for zinc in $\Phi\text{g/L}$ shall be given by:
$$e^{(0.8473[\ln(\text{hardness})]+0.7614)}$$

[VII.A] The numerical CMC criterion for zinc in $\Phi\text{g/L}$ shall be given by:
$$e^{(0.8473[\ln(\text{hardness})]+0.8604)}$$

[Note 5] Hardness in the equations (I) through (VII.A) in [Note 4] above shall be measured as

mg/L of CaCO_3 . The minimum hardness allowed for use in those equations shall not be less than 25 mg/L, as CaCO_3 , even if the actual ambient hardness is less than 25 mg/L as CaCO_3 . The maximum hardness value allowed for use in those equations shall not exceed 400 mg/L, as CaCO_3 , even if the actual ambient hardness is greater than 400 mg/L as CaCO_3 .

[Note 6] The CCC criterion for ammonia shall be (i) thirty day average concentration for total ammonia, computed for a design flow specified in subsection 1105.5; and (ii) and shall account for the influence of the pH and temperature as shown in the following tables.

Total ammonia (in mg/L as ammonia) for various pH and temperatures for CCC for March through June:

pH	Temperature (°C)									
	0	14	16	18	20	22	24	26	28	30
6.50	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.60	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.70	6.44	6.44	5.86	5.15	4.52	3.98	3.42	3.00	2.64	2.32
6.80	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.90	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.00	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.10	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.20	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.30	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.40	4.73	4.73	4.30	3.97	3.49	3.06	2.69	2.37	2.08	1.83
7.50	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.60	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.70	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.80	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.90	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.00	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.10	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.20	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.30	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.40	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.50	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.60	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.70	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.80	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.208
8.90	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.00	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

Total ammonia (in mg/L as ammonia) for various pH and temperatures for CCC for July through February:

pH	Temperature (°C)									
	0-7	8	9	10	11	12	13	14	15*	16*
6.50	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06
6.60	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97
6.70	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86
6.80	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72
6.90	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56
7.00	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37
7.10	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
7.20	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90
7.30	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61
7.40	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30
7.50	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97
7.60	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61
7.70	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25
7.80	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
7.90	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54
8.00	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21
8.10	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91
8.20	2.91	2.73	2.56	2.4	2.25	2.11	1.98	1.85	1.74	1.63
8.30	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.40	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
8.50	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.990
8.60	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836
8.70	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707
8.80	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601
8.90	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513
9.00	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471	0.442

*At 15°C and above, the criterion for July through February is the same as the criterion for March through June.

[Note 7] The CMC criterion for total ammonia shall be (i) the one (1)-hour average concentration for total ammonia, computed for a design flow specified in subsection 1105.5; and (ii) account for the influence of the pH as shown in the following table.

Total ammonia (in mg/L as ammonia) for various pH for CMC:

PH	CMC	pH	CMC	PH	CMC
6.50	48.8	7.40	23.0	8.30	4.71
6.60	46.8	7.50	19.9	8.40	3.88
6.70	44.6	7.60	17.0	8.50	3.20
6.80	42.0	7.70	14.4	8.60	2.65
6.90	39.1	7.80	12.1	8.70	2.20
7.00	36.1	7.90	10.1	8.80	1.84
7.10	32.8	8.00	8.40	8.90	1.56
7.20	29.5	8.10	6.95	9.00	1.32
7.30	26.2	8.20	5.72		

Table 3

Constituent (Chemical Abstracts Service Registry Number)	Criteria for Classes		D
	CCC	CMC	
Organics (in Φ g/L):			
Acrolein (107028)	10.0		780
Acrylonitrile (107131)	700.0		0.66,c
Aldrin (309002)	0.4	3.0	0.00014,c
Benzene (71432)	1000		71.0,c
Carbon tetrachloride (56235)	1000		4.4,c
Chlordane (57749)	0.004	2.4	0.00059,c
Chlorinated benzenes (except Di)	25.0		
Chlorobenzene (108907)			21,000
1,2-Dichlorobenzene (95501)	200		17,000
1,3-Dichlorobenzene (541731)	200		2,600
1,4-Dichlorobenzene (106467)	200		2,600

Hexachlorobenzene (118741)			0.00077,c
Chlorinated ethanes	50		
1,2-Dichloroethane (107062)			99.0,c
1,1,2,2-Tetra- chloroethane(79345)			11.0,c
1,1,1-Trichloroethane (71556)			
1,1,2-Trichloroethane (79005)			42.0,c
Hexachloroethane (67721)			8.9,c
Chlorinated naphthalene			
2-Chloronaphthalene (91587)	200		
Chlorinated phenols			
2-chlorophenol (95578)	100		
2,4-dichlorophenol (120832)	200		790.0
2,4,6-trichlorophenol (88062)			6.5,c
Pentachlorophenol (87865)	[I]	[I.A]	8.2,c
Chloroalkyl ethers	1000		
Bis(2-Chloroethyl)ether (111444)			1.4,c
Bis(2-Chloroisopropyl) ether (108601)			170,000
DDT or isomers (50293,72559 or 72548)	0.001	1.1	0.00059,c
3,3-Dichlorobenzidine (91941)	10		0.077,c
Dichloroethylenes	1000		
1,1-Dichloroethylene (75354)			3.2,c
1,2-Trans-Dichloro- ethylene (156605)			
1,2-Dichloropropane (78875)	2000		
Dichloropropenes	400		
1,3-Dichloropropylene (542756)			1,700
Dieldrin (60571)	0.0019	2.5	0.00014,c
2,4-Dimethylphenol (105679)	200		
2,4-Dinitrotoluene (121142)	33		9.1,c
Dioxin(2,3,7,8-TCDD) (1746016)			0.000000014,c
1,2-Diphenylhydrazine (122667)	30		0.54,c
Endosulfan (959988 or 33213659)	0.056	0.22	2.0

Endosulfan sulfate (1031078)			2.0
Endrin (72208)	0.0023	0.18	0.81
Endrin aldehyde (7421934)			0.81
Ethylbenzene (100414)	40		29,000
Halomethanes	1000		
Bromoform (75252)			360.0,c
Chloroform (67663)	3000		470.0,c
Methyl bromide (74839)			4,000
Methyl chloride (74873)			
Methylene chloride (75092)			1,600,c
Chlorodibromomethane (124481)			34.0,c
Dichlorobromomethane (75274)			22.0,c
Heptachlor (76448)	0.0038	0.52	0.00021,c
Heptachlor epoxide (1024573)	0.0038	0.52	0.00011,c
Hexachlorobutadiene (87683)	10		50.0,c
Hexachlorocyclohexane			
Alpha-BHC (319846)			0.013,c
Beta-BHC (319857)			0.046,c
Gamma-BHC (58899)	0.08	2.0	0.063,c
Hexachloro-			
cyclopentadiene (77474)	0.5		17,000
Isophorone (78591)	1000		600.0,c
Naphthalene (91203)	600		
Nitrobenzene (98953)	1000		1,900
Nitrophenols	20		
2-Methyl-4,6-			765
Dinitrophenol (534521)			
2,4-Dinitrophenol (51285)			14,000
Nitrosamines	600		
N-Nitrosodi-			8.1,c
methylamine (62759)			
N-Nitrosodi-n-Propylamine			
(621647)			
N-Nitrosodi- phenylamine			16.0,c
(86306)			
Phenol (108952)			4,600,000
Phthalate esters	100		
Bis(2-Ethylhexyl)-			5.9,c
phthalate (117817)			
Butylbenzyl phthalate			
(85687)			
Diethyl phthalate (84662)			120,000
Dimethyl phthalate			2,900,000
(131113)			
Di-n-Butyl phthalate			12,000

(84742)			
Polychlorinated biphenyls	0.014		0.000045,c
Polynuclear aromatic hydrocarbons			
Acenaphthene (83329)	50		
Acenaphthylene (208968)			
Anthracene (120127)			110,000
Benzidine (92875)	250		0.00054,c
Benzo(a)Anthracene (56553)			0.031,c
Benzo(a)Pyrene (50328)			0.031,c
Benzo(b)Fluoranthene (205992)			0.031,c
Benzo(k)Fluoranthene (207089)			0.031,c
Chrysene (218019)			0.031,c
Dibenzo(a,h)-Anthracene (53703)			0.031,c
Fluoranthene (206440)	400		370.0
Fluorene (86737)			14,000
Indeno(1,2,3-cd)-Pyrene (193395)			0.031,c
Phenanthrene (85018)			
Pyrene (129000)			11,000
Tetrachloroethylene (127184)	800		8.85,c
Toluene (108883)	600		200,000
Toxaphene (8001352)	0.0002	0.73	0.00075,c
Trichloroethylene (79016)	1000		81.0,c
Vinyl chloride (75014)			525.0,c

[Note 1] ,c After the Human Health Criteria numeric value means that the criteria is based on carcinogenicity (10^{-6}) risk level.

[Note 2] The formulas for calculating the concentrations of substances indicated above are as follows:

[I] The numerical CCC criterion for pentachlorophenol in Φ g/L shall be given by:

$$e^{(1.005(\text{pH}) - 5.290)}$$

[I.A] The numerical CMC criterion for pentachlorophenol in Φ g/L shall be given by:

$$e^{(1.005(\text{pH}) - 4.830)}$$

1105 IMPLEMENTATION AND APPLICABILITY

1105.1 Where the discharge of pollutants in quantities that prevent the attainment of, or violates, the surface water quality standards the Director may grant a variance

from a WQS that is the basis of a water quality-based effluent limitation included in a National Pollutant Discharge Elimination System (NPDES) permit. A WQS variance applies only to the permittee requesting the variance and only to the pollutant or pollutants specified in the variance. A variance does not affect, or require the Director to modify, the corresponding water quality standard for the waterbody as a whole. A variance may be granted only if the discharger can justify every three (3) years through a public hearing process that attaining the WQS is not feasible because at least one (1) of the following conditions exists:

- (a) Irretrievable and irreversible conditions that prevent the attainment of the standards;
- (b) The application of technology sufficient to attain the standards is more stringent than that required by sections 301(b) and 306 of the Federal Clean Water Act, and the application of the technology would result in substantial and widespread adverse economic and social impacts; or
- (c) One or more of the reasons specified in 40 CFR § 131.10 (g).

1105.2 The Director shall not grant a temporary variance from water quality standards if:

- (a) The variance will result in loss of protection for an existing use, or
- (b) The permittee fails to make the demonstrations required under subsection 1105.1.

1105.3 Variances approved by the Director shall include all permit conditions needed to implement those parts of the variance so approved. The permit conditions shall, at a minimum, require:

- (a) Compliance with an initial effluent limitation that, at the time the variance is granted, represents the level currently achievable by the permittee, and that is no less stringent than that achieved under the previous permit;
- (b) That reasonable progress be made toward attaining the water quality standards for the waterbody as a whole through appropriate conditions; and
- (c) A provision that allows the permitting authority to reopen and modify the permit based on any triennial water quality standards revisions to the variance.

1105.4 The Director shall establish and incorporate into the water quality certification of the permittee's discharge permit, all conditions needed to implement the variance as determined pursuant to this section. A variance may be renewed, subject to the

requirements of this section. As part of any renewal application, the permittee shall again demonstrate that attaining WQS is not feasible based on the requirements of subsection 1105.1. The permittee's application shall also contain information concerning its compliance with the conditions incorporated into its permit as part of the previous variance pursuant to this section. The Director may deny renewal of a variance if the permittee did not substantively comply with the conditions of the previous variance.

1105.5 The design flow to be used for establishing permit limitations for discharges to the District waters shall be as follows:

- (a) The numerical criteria for classes A, B, and C(CCC), as delineated in subsection 1104.6, shall not apply at flows less than the average seven-day (7-day) low flow, which has a probability of occurrence of once in ten (10) years;
- (b) The numerical criteria for class C(CMC), as delineated in subsection 1104.6, shall not apply at flows less than the average one-day (1-day) low flow, which has a probability of occurrence of once in ten (10) years; and
- (c) For carcinogenic pollutants under class D, as delineated in subsection 1104.6, the design flow shall be the harmonic mean flow, and for noncarcinogenic pollutants under class D the design flow shall be the average thirty-day (30-day) low flow, which has the probability of occurrence of once in five (5) years. The categorization of pollutants to be carcinogenic or non carcinogenic is shown under the column of Human Health Criteria.
- (d) The numerical criteria for clarity shall not apply at flows greater than the long-term seasonal average flow.
- (e) For chlorophyll a the design flow shall be the average seasonal flow for July through September.

1105.6 High flow conditions in the District of Columbia waters are defined as below:

- (a) For the Potomac River the following conditions shall be considered a high flow:
 - (i) A flow that may result due to a rainfall with an average intensity greater than two-tenths of an inch (0.2") per hour for a period of one (1) hour in the portion of the District of Columbia contributory to the Potomac River, or
 - (ii) A flow equivalent to a three hundred percent (300%) increase in

flow during a twenty-four (24) hour period.

- (b) For the Anacostia River the following conditions shall be considered a high flow:
 - (i) A flow that may result due to a rainfall with an average intensity greater than two-tenths of an inch (0.2") per hour for a period of one (1) hour in the portion of the District of Columbia contributory to the Anacostia River, or
 - (ii) A flow equivalent to a three hundred percent (300%) increase in flow during a twenty-four (24) hour period.
- (c) For Rock Creek and tributaries the following conditions shall be considered a high flow:
 - (i) A flow that may result due to a rainfall with an average intensity greater than two-tenths of an inch (0.2") per hour for a period of one (1) hour in the portion of the District of Columbia contributory to Rock Creek, or
 - (ii) A flow equivalent to a three hundred percent (300%) increase in flow during a twenty-four (24) hour period.
- (d) For other tributaries to the Potomac and Anacostia Rivers a flow equivalent to a five hundred percent (500%) increase in flow during a twenty-four (24) hour period, shall be considered a high flow.

1105.7 Mixing zones may be allowed for point source discharges of pollutants on a case-by-case basis, where it is demonstrated that allowing a small area impact will not adversely affect the waterbody as a whole. The following conditions shall apply:

- (a) In the nontidal waters the permissible size of the mixing zone shall be determined by the ability of organisms to pass through the mixing zone and the size of the receiving water body;
- (b) Mixing zones shall be free from discharged substances that will settle to form objectionable deposits; float to form unsightly masses; or produce objectionable color, odor, or turbidity;
- (c) A mixing zone, or two (2) or more mixing zones, shall not form a barrier to the movements of aquatic life nor cause significant adverse impact on aquatic life in shallow areas that serve as a nursery;
- (d) The concentration of a substance in the mixing zone shall not be lethal to passing organisms, as determined by the appropriate EPA method;

- (e) Mixing zones shall be positioned in a manner that provides the greatest protection to aquatic life and the designated uses of the water;
- (f) Within the estuary, the cross-sectional area occupied by a mixing zone shall not exceed ten percent (10%) of the numerical value of the cross-sectional area of the waterway, and the width of the mixing zone shall not occupy more than one third (1/3) of the width of the waterway;
- (g) Within the estuary, mixing zones may move with the prevailing hydraulic and meteorological conditions;
- (h) The numerical standards for Criteria Continuous Concentration (CCC) in subsection 1104.7 must be met at the edge of the mixing zone and therefore the CMC criteria will be met within some portions of the mixing zone; and
- (i) The mixing zone shall be sized by using the EPA guidance (Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001), March 1991) and approved by the Director.

1105.8 Any permit issued pursuant to section 7 of the Water Pollution Control Act of 1984 (D.C. Official Code § 8-103.06) shall be based on the designated uses and other provisions of these water quality standards.

1105.9 When the Director approves a variance from a water quality standard effluent limitation in a discharge permit, the permittee shall have no more than three (3) years to achieve compliance with the limitation, unless the permittee can demonstrate that a longer compliance period is warranted. A compliance schedule shall be included in the permit.

1105.10 For the purposes of specific effluent limits in permits, the numerical criteria for dissolved cadmium, hexavalent chromium, trivalent chromium, copper, lead, nickel, silver, and zinc shall be calculated by multiplying the criteria for these metals as specified in Table 2 of § 1104.7 by the EPA Conversion Factors specified in Table 2 at 60 Fed. Reg. 22,231 (1995). This conversion is required because the numerical values for these metals in Table 2 of this Chapter were established for total recoverable metals but are being used for dissolved metals.

1106 SITE SPECIFIC STANDARDS

1106.1 If requested, the Director may allow a site-specific study to change the numerical criteria when at least one (1) of the following conditions exists:

- (a) The species, or endangered species, at the site are more or less sensitive

than those included in the national criteria data set; or

- (b) Physical or chemical characteristics of the site alter the biological availability or toxicity of the chemical.

1106.2 If the criteria in subsection 1104.7 are found to be unsuitable for the District waters based on the conditions described in 1106.1, when requested to do so, the Director may adopt site-specific criteria for Class C waters, except for mercury and selenium, or for Class D waters, only when a site-specific study necessitates.

1106.3 When requested to do so, based on the conditions described in subsection 1106.1 and if warranted, the Director shall allow site-specific studies to generate scientific information regarding:

- (a) The water effect ratio for metals specific to the District waters;
- (b) The sensitivities of the aquatic organisms prevalent in the District;
- (c) The toxicity of chemicals to the fish in the District waters and related human health effects; and
- (d) Any other compelling factors that merit consideration for changing the numerical standards in subsection 1104.7.

1106.4 A person or persons planning to conduct a site-specific study shall submit a complete plan of study to the Director for approval, and the site-specific study shall be carried out only after the Director approves the study in writing, subject to the requirements set forth in section 1106.

1106.5 The Director shall provide advance notice to all discharge permittees and applicants for discharge permits prior to the initiation of any site-specific study.

1106.6 All site-specific studies and adoption of site-specific criteria shall be subject to the following requirements:

- (a) Once the Director has approved the study, it shall be concluded in accordance with the approved plan;
- (b) A person or persons conducting a site-specific study subject to subsection 1106.3 shall submit to the Director for review and approval all data, analyses, findings, reports and other information the Director deems necessary;
- (c) The Director shall seek review of the findings of the site-specific studies and other relevant information by the public as well as by appropriate local

and federal government agencies and consider their concerns before adopting any less stringent site-specific criterion based on those findings; and

- (d) If the study concludes that a more stringent criterion is needed for Class C or D waters than provided in subsection 1104.7, then the standards shall be modified to reflect the more stringent level of protection.

1106.7 If a study is conducted to determine the Water Effect Ratio (WER) for metals and the criteria are in the dissolved form, the WER must be based on the dissolved fraction of the metals. If the study is conducted to determine the WER for metals and the criteria are in the total recoverable form, the WER must be based on the total recoverable fraction of the metals. If WERs are to be developed, EPA guidance Interim Guidance on Determination and Use of Water Effect Ratios for Metals, (EPA-823-B94-001, February 1994) shall be used and at a minimum, the following conditions shall be met unless the Director approves a deviation or alternate method:

- (a) If a WER study concludes that an existing criterion is not stringent enough then the criterion shall be made more stringent;
- (b) At least two (2) sensitive indicator species, a fish and at least one (1) invertebrate, shall be used to determine toxicity in laboratory water and water collected from the site;
- (c) The LC₅₀ in the laboratory water must be comparable to the LC₅₀ data developed by EPA;
- (d) Water samples collected from the site shall be representative of critical low flow. A minimum of eight (8) samples per location per season shall be evaluated;
- (e) Samples shall be taken at the edge of the mixing zone unless multiple discharges are involved. At least one (1) sample shall be reasonably well mixed with the flow of the receiving water or the sample shall be well outside the regulatory mixing zone;
- (f) Laboratory water shall be same as the water used by EPA and adjusted for site water characteristics and hardness;
- (g) The trace metal shall be added in the form of a highly soluble inorganic salt;
- (h) The chemical and physical characteristics, both dissolved and total recoverable metal concentrations, hardness, pH, alkalinity, suspended

solids, organic carbon, temperature, and specific metal binding ligands (where known to be important) and any other water quality characteristic that affects bioavailability and toxicity of the water should be monitored during the toxicity tests;

- (i) A WER that is large or that is based on highly variable tests may be rejected;
- (j) The WER shall be the geometric mean of the two (2) species; and
- (k) All chemical, biochemical, biological, and other appropriate analyses shall be conducted by EPA-approved methods.

1106.8 If a site-specific study is conducted to determine the Human Health Criteria and related human health effects, at a minimum, the following information shall be incorporated:

- (a) Bioconcentration factors of the substances in the commonly consumed fish in the District;
- (b) Percent lipids in the commonly consumed fish in the District; and
- (c) Information regarding the consumption by the District citizens of fish caught from the District waters.

1106.9 The determination of 1106.8 (a) and (b) shall be done by EPA-approved methods.

1106.10 The criteria, based on a site-specific study and information collected through the study, shall be calculated using relations developed by EPA (Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) issued March, 1991), minus the component for drinking water, as follows:

- (a) For noncarcinogens:

$$\text{NEW CRITERIA} = (\text{RfD} \times \text{WT}) / (\text{FC} \times \text{L} \times \text{FM} \times \text{BCF})$$

where RfD is the reference dose from the EPA Integrated Risk Information System (IRIS) database, WT is seventy (70) kilograms, FC is the daily fish consumption by the exposed population in kilograms per day, L is the ratio of lipid fraction of fish tissue consumed to three percent (3%), FM is the food chain multiplier and BCF is the bioconcentration factor for fish with three percent (3%) lipid.

- (b) For carcinogens:

$$\text{NEW CRITERIA} = (\text{RL} \times \text{WT}) / (\text{q1}^* \times \text{FC} \times \text{L} \times \text{FM} \times \text{BCF})$$

where WT, FC, L, FM, and BCF are as stated above; RL is 10^{-6} and q1^* is the carcinogenic potency factor from the EPA IRIS database.

1106.11 If the effluent limitation for a metal in a discharge permit is specified as "total recoverable", and the criterion for it in subsection 1104.7 is specified as "dissolved", either of the following two (2) approaches based on The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criterion (EPA 823-b-96-007) June 1996 may be used, subject to review and approval by the Director:

- (a) The criterion may be used as total recoverable for the purpose of establishing effluent limitations; or
- (b) A site-specific ratio between the dissolved and total recoverable metal may be developed by systematic monitoring and analysis of the effluent and of the receiving water at the edge of the mixing zone during periods that reflect the environmental conditions on which the permit was issued. This ratio shall incorporate considerations to avoid toxicity to aquatic organisms from deposition to the sediment outside of the mixing zone. The ratio of dissolved to total recoverable metal will then be used to determine the total recoverable effluent limits based on the dissolved metal criterion.

1106.12 The Director may establish additional requirements for adopting site-specific water quality standards.

1107 to 1149 SECTIONS RESERVED

1199 DEFINITIONS

1199.1 When used in this chapter, the following terms shall have the meanings ascribed:

Ambient - those conditions existing before or upstream of a source or incidence of pollution.

Best management practices - one or several practices found to be the most effective and practical means of preventing or reducing point and non-point source pollution to levels that are compatible with water quality goals.

Criteria - any of the group of physical, chemical, biological, and radiological water quality parameters and the associated numerical concentrations or levels that compose the numerical standards of the water quality standards and that define a component of the quality of the water needed for a designated use.

CCC or Criteria Continuous Concentration - the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (four-day (4-day) average) without deleterious effects at a frequency that does not exceed more than once every three (3) years.

CMC or Criteria Maximum Concentration - the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (one-hour (1-hour) average) without deleterious effects at a frequency that does not exceed more than once every three (3) years.

Current use - the use that is generally and usually met in the waterbody in spite of periodic failure to meet numeric criteria for that use.

Department - the Department of Health.

Designated use - the use specified for the waterbody in the water quality standards.

Director - the Director of the Department, or his or her designee.

EPA - U. S. Environmental Protection Agency.

Enforcement standard - the value assigned to a contaminant for the purpose of regulating an activity, which may be the same as the criterion for that contaminant.

Existing use - the use actually attained in the waterbody on or after November 28, 1975.

Federal Clean Water Act - the Federal Water Pollution Control Act, approved October 18, 1972 (86 Stat. 816; 33 U.S.C. § 1251 *et seq.*), as amended.

Harmonic mean flow - the number of daily flow measurements divided by the sum of the reciprocals of the flows. That is, it is the reciprocal of the mean of the reciprocals.

High quality waters - waters of a quality that is better than needed to protect fishable and swimmable streams.

LC₅₀ or lethal concentration - the numerical limit or concentration of a test material mixed in water that is lethal to fifty percent (50%) of the aquatic organisms exposed to the test material for a period of ninety-six (96) hours.

Load or Loading - the total quantity of a pollutant in a given period of time, e.g., pounds of a pollutant per day.

Mixing zone - a limited area or a volume of water where initial dilution of a discharge takes place and where numerical water quality criteria may be exceeded but acute toxic conditions are prevented from occurring.

Narrative criteria - a condition that should not be attained in a specific medium to maintain a given designated use and is generally expressed in a "free from" format.

Nonpoint source - any source from which pollutants are or may be discharged other than a point source.

Numerical criteria - the maximum level of a contaminant, or the minimum level of a constituent, or the acceptable range of a parameter in water to maintain a given designated use.

Permit or Permitted - an activity, facility or entity authorized through a department permit to treat, store, or dispose of materials or wastes.

Point source - any discrete source of quantifiable pollutants, including a municipal treatment facility discharge, residential, commercial or industrial waste discharge or a combined sewer overflow; or any discernible, confined and discrete conveyance, including any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or concentrated animal feeding operation from which contaminants are or may be discharged.

Pollution - the man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of water.

Pollutant - any substance that may alter or interfere with the restoration or maintenance of the chemical, physical, radiological, or biological integrity of the waters of the District including dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, hazardous wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, oil, gasoline and related petroleum products, and industrial, municipal, and agricultural wastes.

Primary contact recreation - those water contact sports or activities that result in frequent whole body immersion or involve significant risks of ingestion of the water.

Secondary contact recreation - those water contact sports or activities that seldom result in whole body immersion or do not involve significant risks of ingestion of the water.

Solid waste - all putrescible and non-putrescible solid and semisolid wastes, including garbage, rubbish, ashes, industrial wastes, swill, demolition and construction wastes, abandoned vehicles or parts thereof, and discarded commodities. This term also includes all liquid, solid, and semisolid materials that are not the primary products of public, private, industrial or commercial mining, and agricultural operations.

Standards - those regulations, in the form of numerical, narrative, or enforcement standards, that specify a level of quality of the waters of the District necessary to sustain the designated uses.

Surface waters - all rivers, lakes, ponds, wetlands, inland waters, streams, and all other water and water courses within the jurisdiction of the District of Columbia.

Toxic substance - Any substance or combination of substances that after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, may cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), or physical deformities, in the organism or its offspring.

Water Effect Ratio or WER - the ratio of site water LC₅₀ value to the laboratory water LC₅₀ value.

Waters of the District - flowing and still bodies of water, whether artificial or natural, whether underground or on land, so long as in the District of Columbia excluding water on private property prevented from reaching underground or land water courses, and water in closed collection or distribution systems.

Wetland - a marsh, swamp, bog, or other area periodically inundated by tides or having saturated soil conditions for prolonged periods of time and capable of supporting aquatic vegetation.

1199.2 When used in this chapter, the following abbreviations shall have the meaning ascribed:

°C	-	degrees centigrade
m	-	meter
mg/L	-	milligrams per liter
mL	-	milliliter
NPDES	-	National Pollutant Discharge Elimination System

NTU	-	nephelometric turbidity units
µg/L	-	microgram per liter
WQS	-	water quality standard